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ABSTRACT

Personality, environment, and the interaction between them have been suggested as the major factors accounting for career development. Students (N=283) were asked to respond to 28 items on a recently revised self-report instrument, the Career Factor Checklist (CFC), in order to establish the construct validity of the revised CFC and to investigate sex and grade differences in the degree and direction of effect of the six CGC factors: (1) familial; (2) societal; (3) situational; (4) socioeconomic; (5) individual; and (6) psychosocial/emotional. Results showed significant sex differences for the factors, but did not show significant grade level differences for the factors. The findings suggest that counselors should help clients become more aware of the external factors in their career development and that special attention should be given to male clients, whose awareness and willingness to accept the complex effect of the factors affecting their career development seem somewhat limited. The findings also suggest that the revised CFC can function not only as a stimulus for discussing the various factors affecting career decision-making, but as a potential source of information about negative or positive effects of the factors. (PAS)

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DEGREE AND DIRECTION OF MULTIPLE CAREER FACTORS: SEX DIFFERENCES AND CONSTRUCT VALIDITY

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Degree and Direction of Multiple Career Factors:

Sex Differences and Construct Validity

The correlates of career decision making are those factors that affect the individual's career choices. Crites (1969) conceptualizes those factors in terms of stimulus variables (e.g. culture, social class, community), organismic variables (e.g. heredity, physique) and response variables (e.g. interests, personality). The identification of these factors has implications for the practice of career counseling and the development of theory. Greater understanding of the correlates of career decision making will enable counselors to identify individual client patterns and to plan interventions that will facilitate their personal and career development. The correlates of career decision making are especially important for certain groups of clients, such as women, ethnic minorities and the disabled. The special needs of these clients may be identified (Crites,1981) by focusing on factors directly related to problem areas such as sex discrimination, role conflict and the physical characteristics of the working environments.

Attempts have been made to identify the correlates of career decision making by discussing different theoretical-paradigmatic orientations. Some authors discuss personality variables such as "needs" and "self concept" (Bordin,1963; Pietrofesa,1975; Roe,1957; Super,1957), and others (e.g. Caplow, 1954; Lipsett,1971; Miller,1964; Shartle,1959) focus on the individual's environment as the most crucial factor in career decision making. Most researchers however view the career development process as a product of inborn characteristics, environmental factors and the interaction between them. The proponents of a multi-personality/environment factors approach (e.g. Blau,

Parnes, Gustad, Jessor & Wilcock, 1968; Crites,1969; Holland,1973; Krumboltz, Mitchell & Jones,1978) agree that a comprehensive theory should refer to both intrapersonal characteristics as well as past and present environmental influences.

The importance of research aimed at studying the various factors has been stressed by many (Betz,1977; Harren, Kass, Tinsley & Moreland,1978, 1979; Jones,1978; Osipow,1973). Greater attention should be focused on the multiple factors affecting career decision making because of the difficult economical and social conditions that characterize our present society. Scarcity of jobs, reduced federal budgets for education, changes in sex roles and the existing tensions among various sub-groups in our society may all lead to more frequent career changes accompanied by emotional reactions and problems.

A multi-dimensional model (O'Neil, Meeker & Borgers,1978;O'Neil, Ohlde, Barke, Prosser Gelwick & Garfield, 1980; O'Neil, Ohlde, Tollefson, Barke, Piggott & Watts,1980) has been developed and indicates 6 factors and 22 sub-factors that affect both career decision making and sex role socialization. Figure 1 shows these factors. The individual factor is

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Insert Figure 1 about here

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comprised of 5 sub-factors: self-expectancies, abilities, interests, attitudes, and achievement needs. The societal factor includes educational experiences, peer group influences, and mass media. Childhood experiences, mother's role

model, and father's role model comprise the familial factor. The fourth hypothesized factor is the socioeconomic factor which includes social class, race, sex discrimination, and the supply and demand of jobs. The situational factor includes chance and the course of least resistance. The sixth factor is the psychosocial-emotional factor which includes 5 sub-factors: fear of failure, fear of success, lack of confidence, lack of assertiveness, and role conflict. A more detailed discussion of these 6 factors and 22 sub-factors can be found elsewhere (O'Neil & Bush,1978; O'Neil, Meeker & Borgers,1978). The model's factorial structure, validity and utility were tested in a series of research projects using the Career Factor Checklist (CFC)- (Meinecke & O'Neil, in press; O'Neil et al.,1980a; O'Neil et al., 1980b; Piggott, O'Neil & Barke,1982). The CFC is a self-report instrument derived from the O'Neil et al. model. It assesses the degree to which the 6 hypothesized factors and the 22 sub-factors affected the individual's career decision making and sex role socialization. Table 1 provides a summary of the results of studies using the CFC that have tested the model in Figure 1. As evident in the data in Table 1, the construct

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Insert Table 1 about here

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validity of the CFC was established in all 3 studies. The factors hypothesized by O'Neil et al. (1978) consistently accounted for at least 60% of the variance in the process of career decision making. The 3 studies yielded inconsistent results regarding the effects of sex and grade level on

the 6 factors and 22 sub-factors. In one study (O'Neil et al.,1980b) sex x grade interactions were identified for the individual, societal and psychosocial-emotional factors, and a main effect of grade level was indicated for the situational factor. A second study (Meinecke & O'Neil, in press) found a significant main effect of sex for the individual factor, and a study by Piggott et al. (1982) identified a significant main effect of sex for the psychosocial-emotional factor.

The practical applications of the CFC and the model in career counseling seem promising. Counselors can discuss with their clients the implications of the various factors on their career decision making (O'Neil et al.,1980b) using the CFC and the career-sex role model, future career difficulties, as well as sources of satisfaction can be identified and discussed in career interventions.

The Career Factor Checklist has recently been revised to assess not only the degree of effect (i.e. strong, moderate, weak, no effect, unsure of effect), but the direction of effect as well. Assessing the direction of effect of factors ascertains whether the respondents see the factors as positive, negative, or feel unsure about the effects. It has been suggested (O'Neil,1981) that identifying the direction of effect of each of the 6 factors and 22 sub-factors may provide the counselor with more significant information about these influences. A revised CFC that assesses both degree and direction of effect of the factors would be helpful to understanding different populations of clients and identifying significant differences that may exist among these groups.

There are two major purposes to this study. First, the study aimed to establish construct validity of the revised CFC that assesses both the

degree and direction of effect of the factors. Second, the study was designed to gain additional information about the direction of effect of the factors, and in particular as they are influenced by sex and grade level of subjects. It was hypothesized that the 28 items of O'Neil et al. model (1980b) will cluster into the 6 hypothesized factors, both when degree of effect scores and when direction of effect scores are analyzed. In addition, it is hypothesized that sex and grade differences and significant interaction effects (sex x grade) will be identified for both degree and direction of the CFC.

METHODOLOGY

Subjects

Subjects were students (N=823) living in residence halls in a large Midwestern university. The final sample of 508 females and 315 males was distributed by sex and grade as follows: 407 freshmen (127 males and 280 females), 215 sophomores (93 males and 122 females), 115 juniors (45 males and 70 females) and 86 seniors (50 males and 36 females).

Instrumentation

The revised Career Factor Checklist (CFC) asks subjects to evaluate the effects of 28 items on their career decision making process. The number of items comprising each factor is as follows: Familial factor - 4 items; Societal factor - 4 items; Individual factor - 6 items; Socioeconomic factor - 5 items; Situational factor - 3 items; Psychosocial-emotional factor - 6

items. Subjects are asked to rate the effects of these items according to 2 criteria: a) Degree of effect of an item, measured on a 5 point scale consisting of "strong effect" (scored 5), "moderate effect" (scored 4), "weak effect" (scored 3), "no effect" (scored 2), and "unsure of effect" (scored 1). b) Direction of effect of an item, measured on a 4 point scale consisting of "positive effect" (scored 3), "unsure of effect" (scored 2), "negative effect" (scored 1), and "no effect" (scored 0). Subjects are instructed to mark "positive effect"if the item is perceived as encouraging and supporting their career development, "negative effect" if the item is seen as discouraging and not supporting their career development, "unsure of effect" if the subject is unsure whether effects were positive or negative, and "no effect" only if the subject responded "no effect" on the 5 point, degree of effect scale. A recent study (O'Neil et al., 1980b) established the construct validity of the original CFC. Factor analytic procedures identified 6 factors from the 28 items. Mean factor loadings ranged from .64 (societal) to .81 (individual) for males, and from .59 (societal) to .90 (individual) for females. As reported by O'Neil & Ohlde (1980) measures of internal consistency ranged from .65 (societal) to .81 (psychosocial-emotional). In addition to that, test-retest reliabilities over a 4 week interval were established for each of the 6 factors. Those reliabilities ranged from .49 for the socioeconomic factor to .83 for the psychosocial-emotional factor.

Procedures

The revised CFC was administered to 823 students living in the residence halls in a large Midwestern university. CFC data were obtained

during floor meetings (at the beginning of 1981) conducted by residence assistants who administered the instrument to the participants.

Analysis

Six factor analyses (BMDP4M) were performed on the CFC data. Items with factor loadings of at least .35 were used to define the factors. Three factor analyses were performed on the degree of effect scores for women only (N=508), for males only (N=315) and for the total sample (N=823). Three additional factor analyses were performed on the direction of effect scores for women, men and for the total sample. Two multiple analyses of variance were also performed, with sex (males=315, females=508) and grade level (freshmen=407, sophomores=215, juniors=115, seniors=86) as the independent variables. One analysis was performed for degree of effect scores only, and the other for direction of effect scores only.

RESULTS

Tables 2 - 4 show the factorial structure of the revised CFC, by degree and direction scores for males, females and for the total sample. Table 2

Insert Tables 2,3,4 about here

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shows factor loadings for males and indicates 8 factors for degree of effect scores and 8 factors for direction of effect scores. Mean factor loadings ranged from .53 (societal) to .80 (situational) for degree scores, and from .54 (societal) to .78 (Individual) for direction of effect scores.

For females (Table 3) 6 factors were identified for degree scores, and 7 factors for the direction of effect scores. Mean factor loadings ranged from .61 (societal) to .72 (individual) for degree scores, and from .60 (societal) to .71 (supply and demand of jobs) for direction scores. For the total sample (Table 4) 7 factors were identified for degree of effect and 7 for the direction of effect scores. Mean factor loadings ranged from .51 (supply and demand of jobs) to .80 (situational) for degree of effect scores, and from .59 (societal) to .79 (individual) for direction of effect scores.

Inspection of the data presented in Tables 2-4 shows that the following items cross-loaded on more than one factor: a) for <u>males</u> - when degree of effect scores were analyzed, items 5, 10, 23 and 25 cross-loaded on more than one factor. For direction of effect scores, items 6, 7 and 13 cross-loaded on more than one factor. b) for <u>females</u> - an analysis of the degree of effect scores yielded unique factor loadings for all but one item (2). For direction of effect scores, items 7, 17 and 22 cross-loaded on more than one factor. c) for the <u>total sample</u> - items 2 and 19 cross-loaded on more than one factor for degree of effect scores, and items 2, 17 and 22 cross-loaded when direction of effect scores were analyzed. In all cases but one (item 22 for degree of effect scores for males, females and total sample) each item had a factor loading of at least .35 on the factor with which it was theoretically associated.

Table 5 presents the sums of eigenvalues and percentages of variance explained by the 6 factors for degree of effect and direction of effect

for males, females and for the total sample. The percent of variance

Insert Table 5 about here

explained by degree of effect for men was 60% and by direction of effect - 59%. The proportion of variance explained by degree of effect scores for women was 54% and by direction of effect scores also 54%. The total sample indicated that 56% of the variance was explained by degree of effect and 53% of the variance in the process of career decision making was explained when direction of effect scores were analyzed.

As evident in Table 6, in all factor analyses performed, the psychosocial-emotional factor (factor 1) explained the largest proportion of

Insert Table 6 about here

variance, and the Individual factor explained the second largest proportion of variance in all cases.

Table 7 shows the means and standard deviations for each of the factor scores, for both degree of effect and direction of effect,

Insert Table 7 about here

according to sex of subjects and grade levels. Mean scores for each factor for the total sample indicate the following rank order of the data: a) For degree of effect scores - Individual, psychosocial-emotional

socioeconomic, familial, societal and situational. b) For direction of effect scores - Individual, familial, societal, socioeconomic, psycho-social-emotional and situational. These data suggest that on the average, subjects tended to rate the Individual factor as the most influential, and the most positively influential in their career decision making process. The situational factor was rated as the least influential and the least positively influential by subjects in our study. Table 8 shows mean scores

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Insert Table 8 about here

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across grade levels as well as grand means (across sex and grade levels).

Two multivariate analyses of variance were performed on the 6 factors, with sex and grade level as the independent variables. The hypothesis regarding significant interaction effects (sex x grade) was supported for the direction of effect scores. Significant sex x grade interactions for direction of effect were found for the familial factor, $F(3,815)=7.01$, $p=.000$; societal factor, $F(3,815)= 4.75$, $p=.003$; situational factor, $F(3,815)= 3.39$, $p=.018$. Figures 2,3 and 4 depict these interactions. As

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Insert Figures 2, 3, 4 about here

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illustrated in Figures 2-4, the interaction patterns were the same for the three factors. In all cases freshmen women, when compared to freshmen men, reported being more positively influenced by the familial, societal and situational factors. However sophomore, junior and senior women students,

when compared to male students of these grade levels, indicated being less positively influenced by these three factors.

The hypothesis regarding significant sex differences for the factors was supported. For degree of effect of the factors, significant main effects of sex were found for the familial factor, $F(1,814)= 19.76$, $p=.000$; Individual factor, $F(1,814)= 18.31$, $p=.000$; socioeconomic factor, $F(1,814)= 8.59$, $p=.003$; psychosocial-emotional factor, $F(1,814)= 7.73$, $p=.006$. Additionally, main effects of sex were found for direction of effect scores for the familial factor, $F(1,815)= 5.73$, $p=.017$; Individual factor, $F(1,815)= 6.596$, $p=.010$, and the socioeconomic factor, $F(1,815)= 3.96$, $p=.047$. In all cases, females scored higher than men, indicating that women reported being significantly more and/or more positively affected by those factors in their career decision making.

The hypothesis about significant grade level differences for the factors was not confirmed. The main effect for grade level differences for both degree and direction of effect was not significant.

DISCUSSION

The present study and others attempt to increase our understanding of the factors that affect the career decision making process (Heinecke & O'Neil, in press; O'Neil et al.,1978; O'Neil et al.,1980a; O'Neil et al.,1980b; Piggott et al.,1982). The study had two major hypotheses about the O'Neil et al. model. The hypothesis that the 28 Career Factor Checklist (CFC) items

would cluster into the six hypothesized factors was partially supported. The hypothesis that there would be significant sex x grade interaction effects for the six factors was supported for the familial, societal and situational factors for direction of effect. No significant interaction effects were identified for the degree of effect scores. Significant main effects of sex were found for direction of effect scores on the Individual, familial, socioeconomic and psychosocial-emotional factors, and for degree scores on the Individual and socioeconomic factors. The hypothesis that there would be main effect of grade was not supported.

As hypothesized, the factor analytic procedures indicate that the familial, societal and psychosocial-emotional factors retained their original factorial structure (O'Neil et al., 1980) with minimal exceptions across all subjects. The factorial structure of the Individual factor was also retained in the female sample and in the total group. The factorial structure of the situational and socioeconomic factors was altered for male and female students, and the Individual factor was altered for the males only. For both sexes and for the total sample, the socioeconomic factor split into two clusters: social class, race and sex discrimination, and a second cluster of supply and demand of jobs. This clustering was evident in all but one analysis (males-degree scores). In an earlier research (Meinecke & O'Neil, in press) the cluster of race and sex discrimination was called "the discrimination factor", and was identified as a separate factor for their female subjects only. In the

present research, social class was associated with this discrimination factor in 5 out of 6 analyses, and occured for males, females and for the total sample. This evidence supports the existence of a discrimination factor in the model that is separate from the supply and demand of jobs item.

The situational factor was altered in its structure for all three analyses involving degree of effect scores. "Course of least resistance", which was originally associated with the situational factors, emerged as a sub-factor of the psychosocial-emotional factors. This same pattern was indicated for females and for the total sample (factor loadings of .36 and .38, respectively) when direction of effect scores were analyzed. However in these two analyses, "course of least resistance" loaded higher on the situational factor, as was originally hypothesized. These findings were supported by similar results for the female sample in Meinecke & O'Neil's study, and suggest that "course of least resistance" may best be categorized as a psychosocial-emotional factor. These results make logical sense, since the course of least resistance influences an individual's choices to the extent that the person is psychologically "predisposed" a) to perceive a course of action as least resistance", and b) to generally and consistently choose or avoid choosing the course of least resistance.

The cluster of Individual factors retained its original structure in the female and total sample. However, for the males, two separate clusters of Individual factors were identified, as was the case in Meinecke & O'Neil's

study. One cluster included "abilities" and "interests", and the second included "need to achieve","self-expectancies" and Attitudes". This clustering also makes sense. The nature of the breakdown of the Individual factor may be related to the value system of men, in that the cluster of "abilities" and "interests" explained more reliable variance than the second cluster only for the male subjects in the study. Young men may be more likely to report the impact of their abilities and interests rather than the impact of their attitudes, need to achieve and self-expectancies. However, young women in our study did not endorse the Individual factor differentially.

Many of the factors retained their hypothesized factorial structure, but there were some items that loaded on more than one factor. With the multitude of cross-loads possible in our analyses, only 10 items cross-loaded, and with the exception of "course of least resistance", each item loaded at least .35 on the factor with which it was theoretically associated.

As In previous studies, factor analytic procedures showed that the CFC and the model consistently accounted for at least 50% of the variance in subjects' perception of their career decision making process. In all analyses performed, the psychosocial-emotional factor and the Individual factor explained the largest proportion of variance respectively. As was evidenced in Meinecke & O'Neil's study, the "internal factors" (i.e. psychosocial-emotional and Individual) seem to account for more variance than the "external factors" (e.g. situational, socioeconomic and societal).

The amount of variance explained by the degree of effect scores has been confirmed by earlier research (O'Neil et al.,1980). However the present findings establish the construct validity of the model when both degree and direction scores are considered. The results of our study and previous findings regarding the factorial structure of O'Neil's model support the hypothesized model with some minor alterations. As suggested in Figure 3, the following modifications seem to be indicated

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Insert Figure 5 about here

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for the female subjects: a) Separating the socioeconomic cluster into "discrimination factor" and a factor of "supply and demand of jobs". b) Separating the situational cluster into "chance" and "course of least resistance". The findings suggest that "course of least resistance" belongs with the psychosocial-emotional factors, and it is therefor added to the psychosocial-emotional cluster as the sixth sub-factor. It is suggested that the model for the male subjects will be altered so that there will be, in addition to the previous two alterations, a breakdown of the Individual factor into one cluster of "abilities" and "interests", and a second cluster consisting of "need to achieve", self-expectancies" and "attitudes". These changes are found in Figure 6.

Insert Figure 6 about here

The MANOVAs performed yielded significant sex x grade interaction effects for the familial, societal and situational factors, when direction

of effect scores were analyzed. The pattern of the interaction was identical for all three factors. Freshmen women compared to freshmen men, reported being more positively affected by the familial, societal and situational factors. However this trend is reversed after the freshmen year. Sophomore, junior and senior male students indicated being more positively influenced by those factors than women of the same grade levels. These results are intriguing, in particular when viewed from a developmental point of view. Although the nature of our design precludes conclusions along these lines, the significant interaction effect may reflect socialization and adjustment processes that take place during college years and may have differential patterns for men when compared to women.

Six significant main effects for sex were identified in our study, and in all cases women reported higher scores than men. When degree of effect scores were analyzed, women, compared to men, reported that the familial, Individual, socioeconomic and psychosocial-emotional factors influenced their career decision making process more strongly. In addition, women, when compared to men, reported that the Individual and socioeconomic factors affected their career decision making more positively (i.e. in terms of direction of effect).

In summarizing the significant interaction and main effects identified in our study, it seems that men and women tend to report differential effect of most factors, in some instances dependent on their grade level. Freshmen female students, when compared to freshmen men students, rate all 6 factors as stronger in their influence, and all but one (psychosocial-emotional) as

more positively influential in their career development. As in their freshmen year, sophomore junior and senior women students see the six factors as stronger in their influence than men do. However, these women do not perceive the effects of the familial, societal and situational factors as positively as freshmen women do; Moreover, sophomore, junior and senior male students, when compared to women of the same grade levels, indicate that the familial, societal and situational factors affect their career decision making more positively. In addition, all subjects rated the Individual factors as the most influential and having the most positive effect on their career development. The situational factor was rated as the least influential and having the least positive effect. These findings and the results of the factor analyses suggest that in general, "internal factors" are perceived as more positively influential than "external factors" when rated by college students. These results may be explained by hypothesizing that these subjects had less awareness of the effect of the "external factors"(O'Neil et al., 1980b). It is also possible that when subjects evaluate the effects of the "internal factors" they tend to subsume under these the effects of some "external" factors/sub-factors. If this is the case, then the importance of the "internal factors" may be inflated and the significance of the "external factors" (societal, situational) may be deflated to some extent.

The findings of the present study suggest that counselors should help clients become more aware of the effects of the "external factors" in their career development (O'Neil et al.,1980b). Special attention should be given

to male clients, whose awareness and/or willingness to accept the complex effect of the factors affecting their career development seem somewhat limited. The findings regarding the direction of effect scores suggest that the revised CFC can function not only as a stimulus for discussing the various factors affecting career decision making, but a potential source of information about negative or positive effects of the factors. Important questions about these factors can be raised, such as: 1) Can we help the clients understand the perceived effect of these factors as part of career counseling? 2) Can we prevent potential career related difficulties by encouraging students to assess the negative/positive direction of effect of these factors as it relates to their future career choices? 3) How do male and female students' perceptions of these factors change over the college years? These questions and others need to be answered in longitudinal research projects that will be focused on three major issues: 1) The systematic differences between the sexes in terms of ascribing more/less importance to the factors affecting their career development and sex role socialization. 2) The interaction between sex and grade level for these factors. 3) The systematic differences in ratings of "external factors" as compared to "internal factors".

It is important to realize that our study is limited in ways that may bias the findings. First, there are larger numbers of women in our sample when compared to the numbers of our male subjects. This may account for some of the differences identified between men and women in our study. Second, there are considerable differences in the numbers of subjects in

each grade level. The largest difference is for seniors (N=86) and freshmen (N=407). Another source of difficulty, as mentioned by Meinecke & O'Neil (in press), has to do with the issue of social desirability. A few factors, and in particular those associated with the psychosocial-emotional factors, seem to have more negative connotations associated with them.

Taking into account the limitations of our study, and incorporating the modifications of the model as suggested before, the findings of the present study provide a further validation of O'Neil et al. model. The factors hypothesized account for at least 52% of the variance in how students perceive the factors affecting their career decision making. A significant and meaningful source of information is provided by the addition of direction of effect of the factors. This new dimension seems to be perceived differentially by men and women in our study, depending on their grade levels. This study also confirms previous findings (Meinecke & O'Neil, in press; O'Neil et al., 1980b) that suggest that college men and women differ systematically in their perception of the degree of effect of factors affecting their career decision making.

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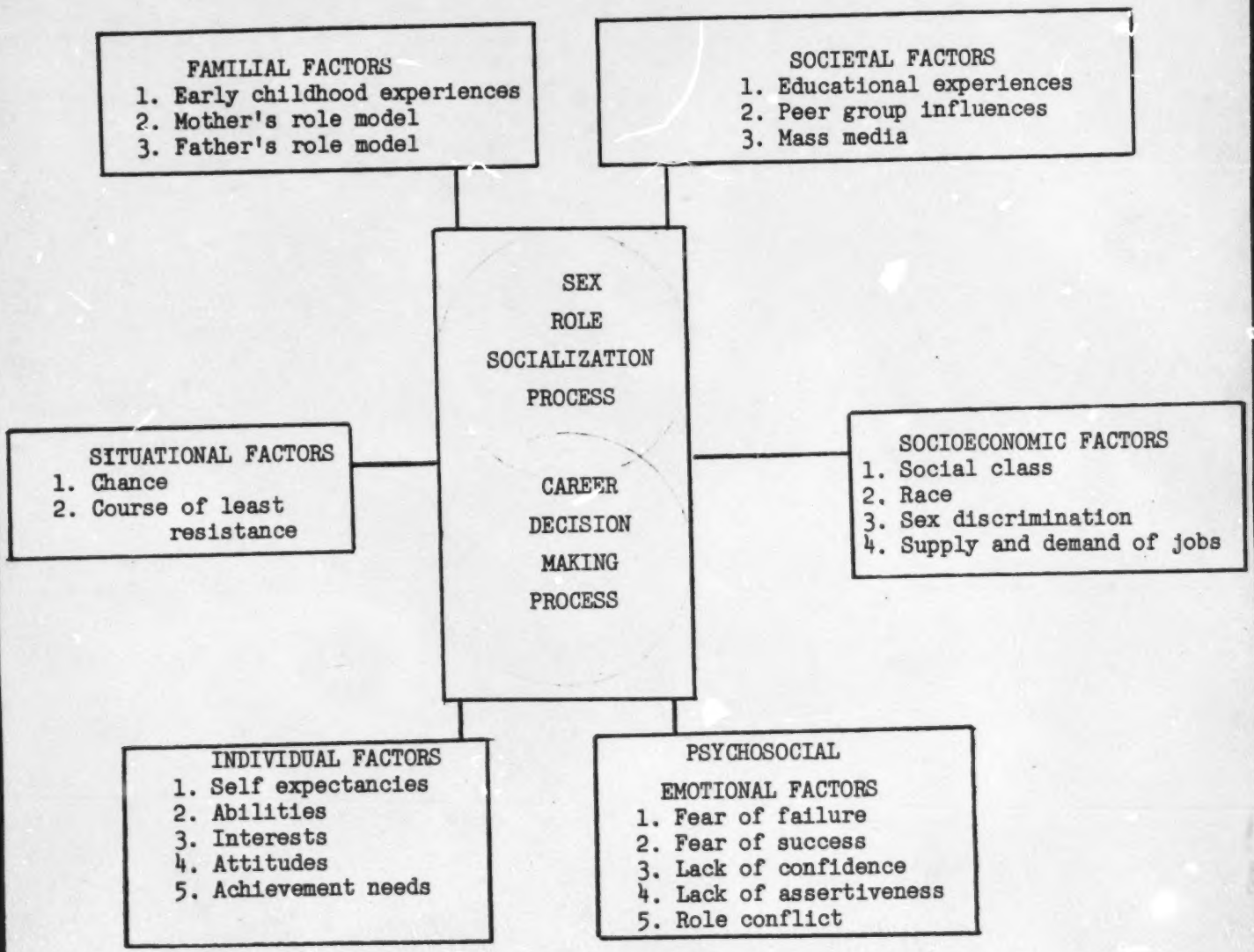


Figure 1 - The factors affecting career decision making and sex role socialization (O'Neil & Ohlde,1980; O'Neil et al.,1980a; 1980b;)

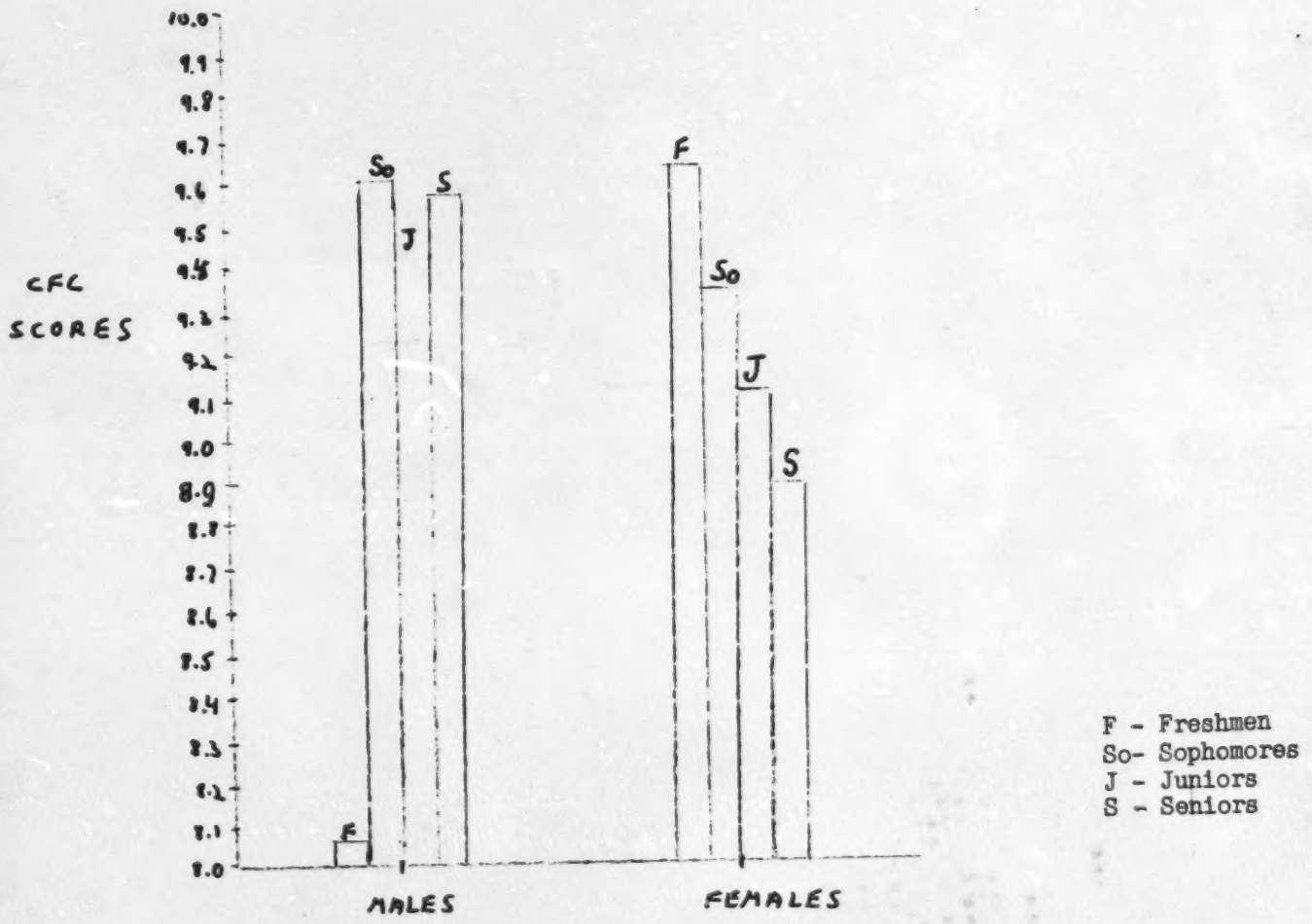
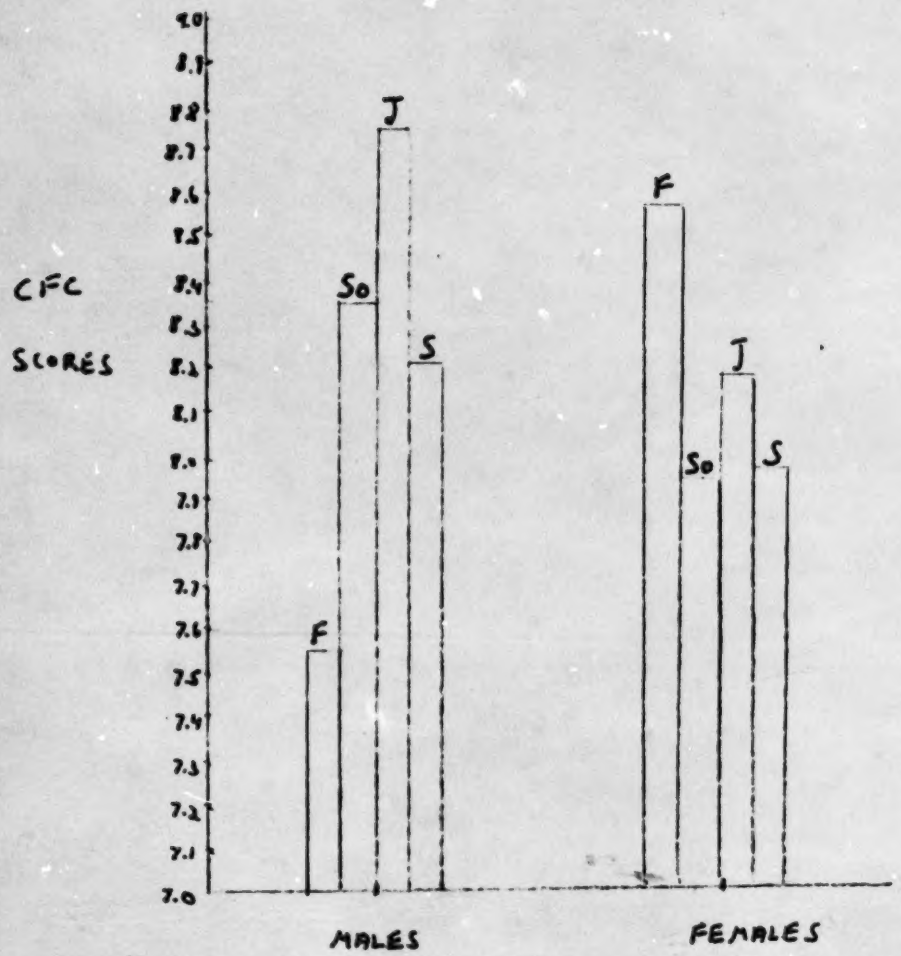


Figure 2 - The Familial factor: Sex x grade interaction for direction of effect



F - Freshmen
So-Sophomores
J - Juniors
S - Seniors

Figure 3 - The Societal factor: Sex x grade interaction for direction of effect

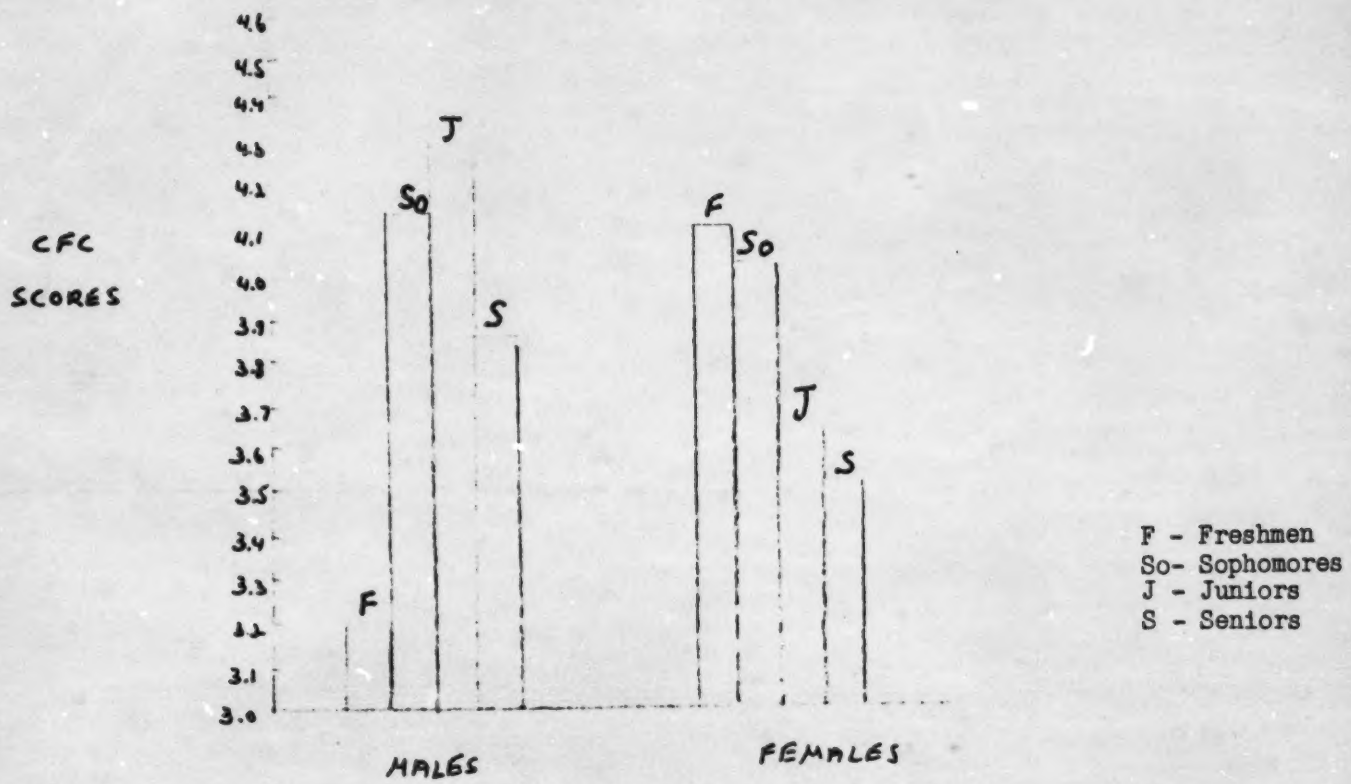


Figure 4 - The Situational factor: Sex x grade interaction for direction of effect

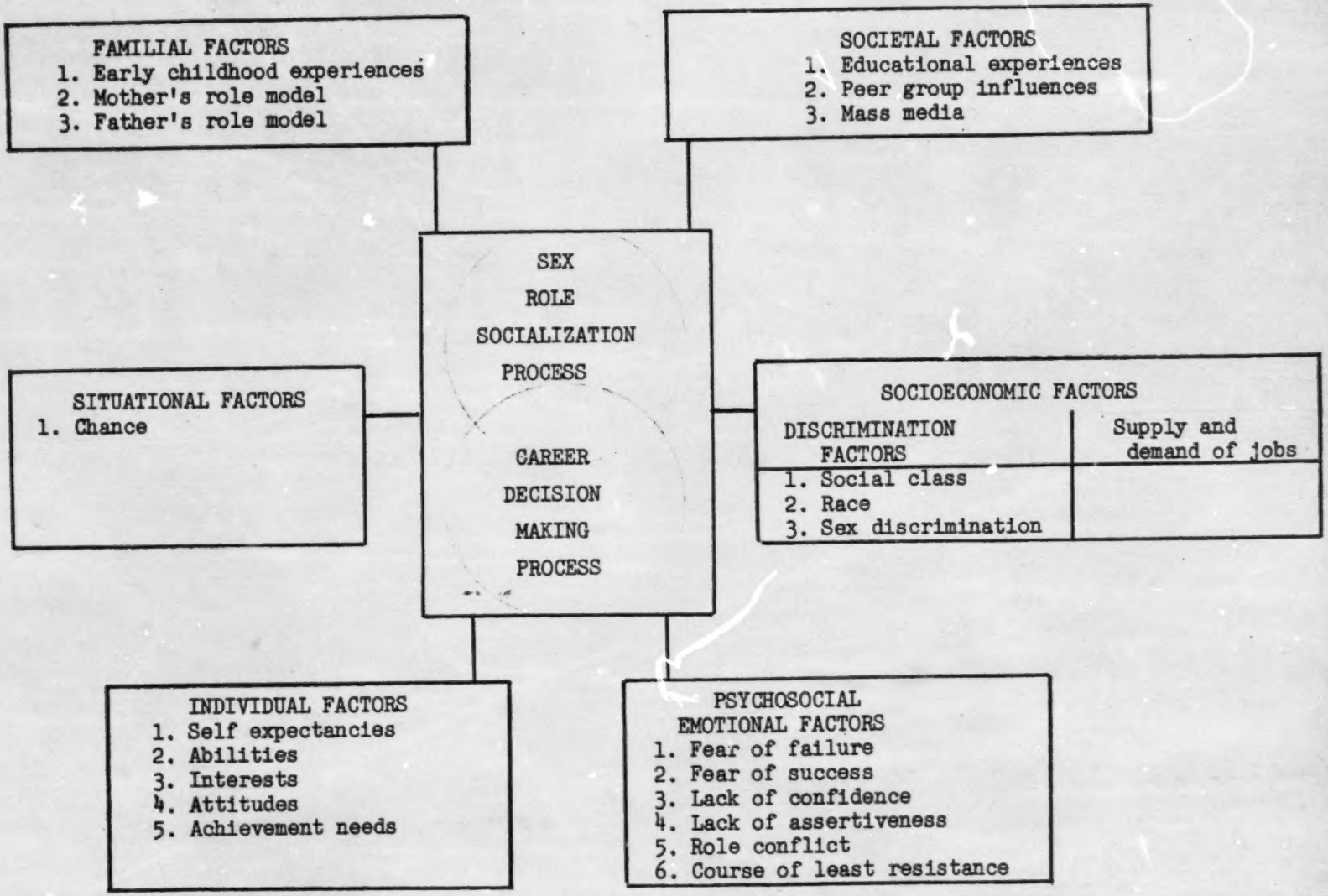


Figure 5 - The factors affecting career decision making and sex role socialization of women - A revision of O'Neil et al. model (O'Neil & Ohlde,1980; O'Neil et al.,1980a; 1980b)

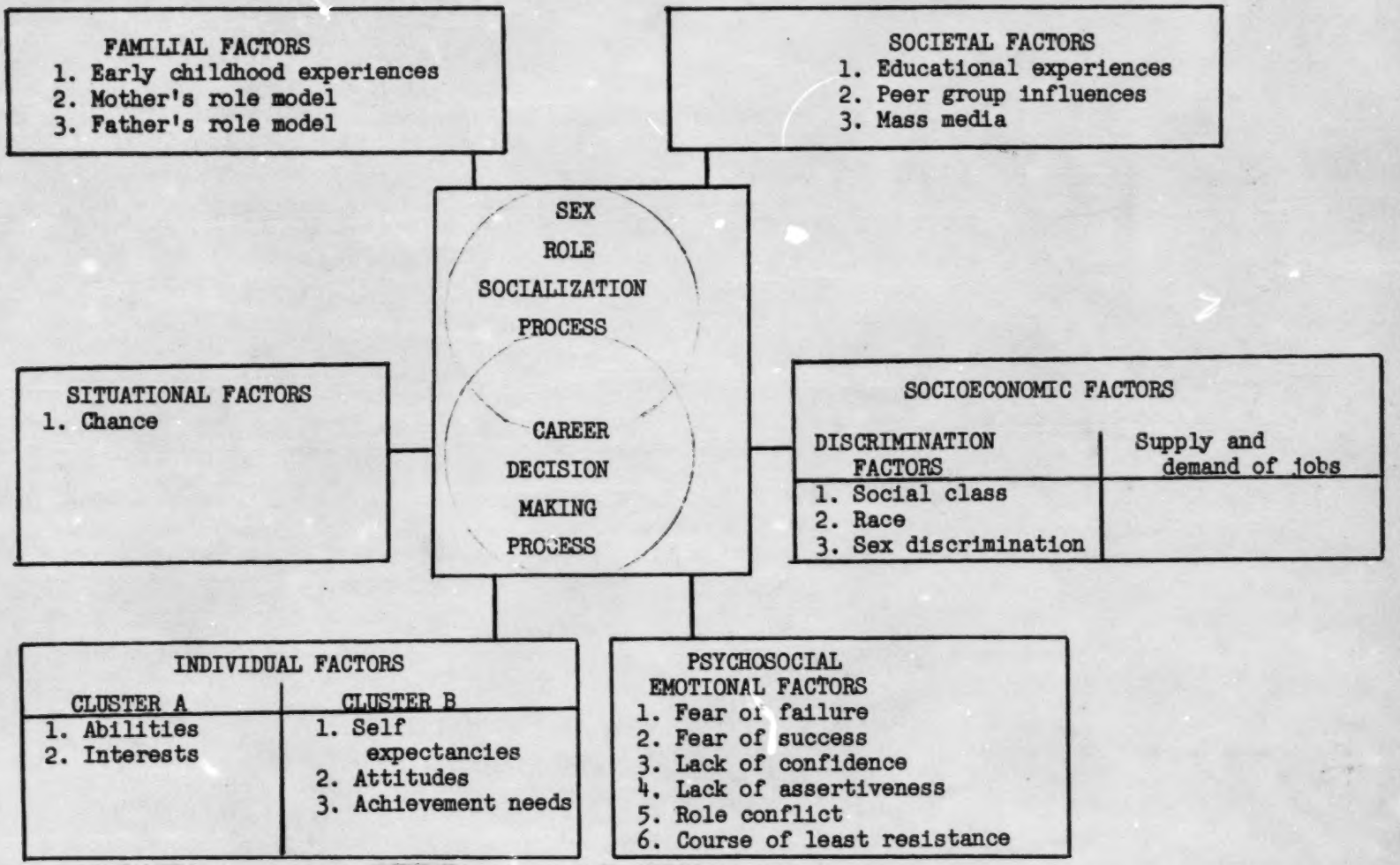


Figure 6 - The factors affecting career decision making and sex role socialization of men - A revision of O'Neil et al. model (O'Neil & Ohlde,1980; O'Neil et al., 1980a; 1980b)

Table 1

Summary of Studies on the Career Factor Checklist (1980-1982)

Studies Completed	Sample Characteristics	ANOVA: Main Effects (Fam. / Socie. / Indiv. / Socioe. / Situat. / Psycho. emo.)	ANOVA: Interactions (Fam. / Socie. / Indiv. / Socioe. / Situat. / Psycho. emo.)	FACTOR ANALYSIS: Number of Factors Identified (M / F / TOTAL)	FACTOR ANALYSIS: Factor Explaining Largest % of Variance (M / F / TOTAL)	FACTOR ANALYSIS: % Explained of Accumulated Variance (M / F / TOTAL)
O'Neil et al. 1980 b.	N = 1,436 M / F High School 67 / 110 Freshmen 197 / 289 Sophomore 70 / 132 Junior 83 / 103 Senior 69 / 71 Graduate 105 / 110 Special 91 / 21 From classes and residence halls in 2 large Midwestern Universities and a High School.	- - - - ✓ - Variables: Sex, Grade A significant main effect of Grade a) HS, Fr., Soph. > Jr., Spec., Grad. b) Sr. > Grad. c) Fr., Soph., HS > Jr., Spec. d) HS, Fr., Soph., Sr. > Grad.	- - ✓ ✓ - ✓ I. Individual, Societal: a) Males Fr., Soph., Spec. > Females b) Females HS, Sr. > Males II. Psychosocial-Emotional a) Females Fr., Soph., Sr. > Males	(NA) (NA) 6	Fam. Fam. (NA)	60 66 (NA)
Neimecke & O'Neil, in press	N = 409 (only 354 for ANOVA's) Females=198; Males=156 Freshmen=276; Sophomores=78 Introductory Psychology Students in a large Midwestern University.	- - ✓ - - - Variables: Sex, Grade A significant main effect of Sex Females > Males	- - - - - -	8 9 8	Psycho Social - Emotional	62 65 60

NA = Not applicable

Table 1 (cont.)

Summary of Studies on the Career Factor Checklist (1980-1982)

Studies Completed	Sample Characteristics	ANOVA: Main Effects (Fam. / Socie. / Indiv. / Socioe. / Situat. / Psycho. emo.)	ANOVA: Interactions (Fam. / Socie. / Indiv. / Socioe. / Situat. / Psycho. emo.)	FACTOR ANALYSIS: Number of Factors Identified (M / F / TOTAL)	FACTOR ANALYSIS: Factor Explaining Largest % of Variance (M / F / TOTAL)	FACTOR ANALYSIS: % Explained of Accumulated Variance (M / F / TOTAL)
Piggott et al. 1982	N = 270 Females=177; Males=93 Freshmen = 177 Sophomores = 37 Juniors = 91 Seniors = 37 Special = 10 2 undergraduate classes in a large Midwestern University	– – – – – ✓ Variable: Sex Males > Females	N.A.	N.A.	N.A.	N.A.
O'Neil et al. 1982	N = 823 Females=508; Males=315 Freshmen = 407 Sophomores = 215 Juniors = 115 Seniors = 86 Resident Halls students	Degree: ✓ – ✓ ✓ – ✓	– – – – – –	8 6 7	Psycho Social - Emotional	60 54 56
		Direction: – ✓ ✓ – –	✓ ✓ – – ✓ – I. Familial, Societal, Situational: a) Males Soph., Jr., Sr. > Females b) Females Fr. > Males	8 7 7	Psycho Social - Emotional	59 54 53
		A significant main effect of Sex. Females > Males				

NA = Not applicable

TABLE 2

Factorial Structure of Career Factor Checklist (CFC)
For Males (N=315)

Degree of Effect		Direction of Effect	
Factor 1 - Familial		**Factor 1 - Familial**	
Item	**Loading**	**Item**	**Loading**
1. Familial factors	.71	1. Familial factors	.72
2. Childhood experiences	.42	2. Childhood experiences	.60
3. Mother's role model	.72	3. Mother's role model	.74
4. Father's role model	.73	4. Father's role model	.74
mean factor loading	.65	mean factor loading	.70
Factor 2 - Societal		**Factor 2 - Societal**	
5. Societal factors	.44(4)[1]	5. Societal factors	.65
7. Peer group influences	.73	6. Educational experiences	.36 (3)[1]
8. Mass media	.41	7. Peer group influences	.51 (7)[1]
23. Psychological emotional factors	.45 (6)[2]	8. Mass media	.62
mean factor loading	.53[2]	mean factor loading	.54
Factor 3 - Individual		**Factor 3 - Individual**	
6. Educational experiences	.51	6. Educational experiences	.36 (2)[1]
9. Individual factors	.76	9. Individual factors	.81
10. Self expectancies	.45 (8)[1]	11. Abilities	.75
11. Abilities	.75	12. Interests	.79
12. Interests	.73	13. Need to achieve	.37 (8)[1]
mean factor loading	.69	mean factor loading	.78
Factor 4 - Socioeconomic		**Factor 4 - Socioeconomic**	
5. Societal factors	.45 (2)[1]	15. Socioeconomic factors	.57
15. Socioeconomic factors	.66	16. Social class	.66
16. Social class	.73	17. Race	.80
19. Supply and demand of jobs	.53	18. Sex discrimination	.62
mean factor loading	.59	mean factor loading	.66
Factor 5 - Situational		**Factor 5 - Situational**	
20. Situational factors	.81	20. Situational factors	.79
21. Chance	.78	21. Chance	.83
		22. Course of least resistance	.57
mean factor loading	.80	mean factor loading	.73
Factor 6 Psychosocial-emotional		**Factor 6 - Psychosocial-emotional**	
22. Course of least resistance	.39	23. Psychosocial-emotional	.47
23. Psychosocial-emotional	.38 (2)[1]	24. Fear of failure	.51
24. Fear of failure	.57	25. Fear of success	.77
25. Fear of success	.54 (7)[1]	26. Lack of assertiveness	.80
26. Lack of assertiveness	.82	27. Lack of confidence	.80
27. Lack of confidence	.78	28. Role conflict	.64
28. Role conflict	.59	mean factor loading	.67
mean factor loading	.66		
Factor 7 - Socioeconmic		**Factor 7 - Socioeconomic**	
17. Race	.74	7. Peer group influences	-.37 (2)[1]
18. Sex Discrimination	.78	19. Supply and demand of jobs	.65
25. Fear of Success	.47 (6)[1]	mean factor loading	.65
mean factor loading	.66		
Factor 8 - Individual		**Factor 8 - Individual**	
10. Self expectancies	.59 (3)[1]	10. Self expectancies	.69
13. Need to achieve	.78	13. Need to Achieve	.66 (3)[1]
14. Attitudes	.72	14. Attitudes	.80
mean factor loading	.70	mean factor loading	.75

[1]This item cross-loaded on the factor that is in the parenthesis.
[2]Items that cross-loaded were included in computing mean factor loadings where they loaded the highest.

TABLE 3

Factorial Structure of Career Factor Checklist (CFC)
For Females (N=508)

Degree of Effect		Direction of Effect	
Factor 1 - Familial		**Factor 1 - Familial**	
Item	**Loading**	**Item**	**Loading**
1. Familial factors	.70	1. Familial factors	.68
2. Childhood experiences	.39 (5)[1]	2. Childhood experiences	.47
3. Mother's role model	.72	3. Mother's role model	.75
4. Father's role model	.74	4. Father's role model	.74
mean factor loading	.72[2]	mean factor loading	.66
Factor 2 - Societal		**Factor 2 - Societal**	
5. Societal factors	.68	5. Societal factors	.68
6. Educational expenses	.69	6. Educational expenses	.57
7. Peer group influences	.60	7. Peer group influences	.50 (7)[1]
19. Supply and damand of jobs	.47	8. Mass media	.65
mean factor loading	.61	mean factor loading	.60
Factor 3 - Individual		**Factor 3 - Individual**	
9. Individual factors	.68	9. Individual factors	.70
10. Self expectancies	.68	10. Self expectancies	.66
11. Abilities	.70	11. Abilities	.74
12. Interests	.74	12. Interests	.63
13. Need to achieve	.65	13. Need to achieve	.71
14. Attitudes	.61	14. Attitudes	.65
mean factor loading	.68	mean factor loading	.68
Factor 4 - Socioeconomic		**Factor 4 - Socioeconomic**	
15. Socioeconomic factors	.70	15. Socioeconomic factors	.75
16. Social class	.72	16. Social class	.74
17. Race	.69	17. Race	.52 (6)[1]
18. Sex Discrimination	.60	18. Sex discrimination	.50
mean factor loading	.68	mean factor loading	.63
Factor 5 - Situational		**Factor 5 - Situational**	
2. Childhood experiences	.49 (1)[1]	20. Situational factors	.75
8. Mass media	.52	21. Chance	.79
20. Situational factors	.74	22. Course of least resistance	.55 (6)[1]
21. Chance	.73	mean factor loading	.70
mean factor loading	.62		
Factor 6 Psychosocial-emotional		**Factor 6 - Psychosocial-emotional**	
22. Course of least resistance	.59	17. Race	.47 (4)[1]
23. Psychosocial-emotional factors	.52	22. Course of least resistance	.38(5)[1]
24. Fear of failure	.73	23. Psychosocial-emotional factors	.41
25. Fear of success	.69	24. Fear of failure	.65
26. Lack of assertiveness	.79	25. Fear of success	.73
27. Lack of confidence	.80	26. Lack of assertiveness	.73
28. Role conflict	.57	27. Lack of confidence	.77
mean factor loading	.67	28. Role conflict	.61
		mean factor loading	.65
		Factor 7 - Socioeconomic	
		7. Peer group influences	-.37 (2)[1]
		19. Supply and demand of jobs	.71
		mean factor loading	.71

[1]This item cross-loaded on the factor that is in the parenthesis.
[2]Items that cross-loaded were included in computing mean factor loadings where they loaded the highest.

TABLE 4

Factorial Structure of Career Factor Checklist (CFC)
For Total Sample (N=823)

Degree of Effect		Direction of Effect	
Factor 1 - Familial		**Factor 1 - Familial**	
Item	**Loading**	**Item**	**Loading**
1. Familial factors	.72	1. Familial factors	.69
2. Childhood experiences	.36 (7)[1]	2. Childhood experiences	.51 (7)[1]
3. Mother's role model	.70	3. Mother's role model	.75
4. Father's role model	.72	4. Father's role model	.76
mean factor loading	.71[2]	mean factor loading	.68
Factor 2 - Societal		**Factor 2 - Societal**	
5. Societal factors	.69	5. Societal factors	.67
6. Educational expenses	.66	6. Educational expenses	.53
7. Peer group influences	.59	7. Peer group influences	.53
8. Mass media	.36	8. Mass media	.64
19. Supply and demand of jobs	.42 (7)[1]		
mean factor loading	.54	mean factor loading	.59
Factor 3 - Individual		**Factor 3 - Individual**	
9. Individual factors	.69	9. Individual factors	.69
10. Self expectancies	.70	10. Self expectancies	.67
11. Abilities	.68	11. Abilities	.72
12. Interests	.73	12. Interests	.66
13. Need to achieve	.64	13. Need to achieve	.69
14. Attitudes	.60	14. Attitudes	.60
mean factor loading	.67	mean factor loading	.67
Factor 4 - Socioeconomic		**Factor 4 - Socioeconomic**	
15. Socioeconomic factors	.64	15. Socioeconomic factors	.74
16. Social class	.66	16. Social class	.73
17. Race	.72	17. Race	.60 (6)[1]
18. Sex discrimination	.63	18. Sex discrimination	.52
mean factor loading	.66	mean factor loading	.65
Factor 5 - Situational		**Factor 5 - Situational**	
20. Situational factors	.81	20. Situational factors	.78
21. Chance	.78	21. Chance	.81
		22. Course of least resistance	.53 (6)[1]
mean factor leading	.80	mean factor loading	.71
Factor 6 Psychosocial-emotional		**Factor 6 - Psychosocial-emotional**	
22. Course of least resistance	.52	17. Race	.39 (4)[1]
23. Psychosocial-emotional	.52	22. Course of least resistance	.36 (5)[1]
24. Fear of failure	.68	23. Psychosocial-emotional factors	.46
25. Fear of success	.68	24. Fear of failure	.61
26. Lack of assertiveness	.79	25. Fear of success	.74
27. Lack of confidence	.79	26. Lack of assertiveness	.76
28. Role conflict	.58	27. Lack of confidence	.80
		28. Role conflict	.62
mean factor loading	.65	mean factor loading	.67
Factor 7 - Socioeconmic		**Factor 7 - Socioeconomic**	
2. Childhood expectancies	.51 (1)[1]	7. Child expectancies	-.41 (1)[1]
19. Supply and demand of jobs	.40 (2)[1]	19. Supply and demand of jobs	.79
mean factor loading	.51	mean factor loading	.79

[1]This item cross-loaded on the factor that is in the parenthesis.
[2]Items that cross-loaded were included in computing mean factor loadings where they loaded the highest.

TABLE 5

Sum of Eigenvalues and Percent of
Variance Explained by Sex and Total Group

	MALES		FEMALES		TOTAL	
	Degree	Direction	Degree	Direction	Degree	Direction
Sum of Eigenvalues	16.9	17.3	15.1	15.1	15.6	14.8
Percent of Variance Explained	60.4	58.8	53.8	53.9	55.7	52.9

Table 6

Sums of Eigenvalues and % of Variance
Accounted for in the Sample of Males

		Psychosocial Emotional	Individual (A)	Familial	Individual (B)	Socioeconomic (A)	Situational	Socioeconomic (B)	Societal
Degree of Effect	Sum of Eigenvalues	6.47	2.87	1.66	1.47	1.3	1.1	1.02	1.0
	% Variance Explained	23.1	10.3	5.91	5.2	4.6	3.9	3.7	3.6

		Psychosocial Emotional	Individual (A)	Familial	Situational	Socioeconomic (A)	Individual (B)	Societal	Supply and Demand of Job
Direction of Effect	Sum of Eigenvalues	4.94	3.62	1.64	1.55	1.22	1.22	1.56	1.12
	% Variance Explained	17.6	12.9	5.8	5.6	4.4	4.3	4.1	4.0

Table 6 (Continued)

Sums of Eigenvalues and % of Variance
Accounted for in the Sample of Females

		Psychosocial Emotional	Individual	Socioeconomic (A)	Situational	Familial	Societal
Degree of Effect	Sum of Eigenvalues	6.72	2.77	1.78	1.4	1.21	1.18
	% Variance Explained	24	9.9	6.3	5.0	4.3	4.2

		Psychosocial Emotional	Individual	Familial	Socioeconomic (A)	Situational	Societal	Supply and Demand of Jobs
Direction of Effect	Sum of Eigenvalues	4.85	3.73	1.72	1.38	1.22	1.15	1.03
	% Variance Explained	17.3	13.3	6.1	4.9	4.4	4.1	3.7

Table 6 (Continued)

Sums of Eigenvalues and % of Variance
Accounted for in the Total Sample

		Psychosocial Emotional	Individual	Socioeconomic (A)	Familial	Societal	Situational	Supply and Demand of Jobs
Degree of Effect	Sum of Eigenvalues	6.41	2.79	1.64	1.39	1.19	1.14	1.01
	% Variance Explained	22.9	10.0	5.9	5.0	4.3	4.1	3.6

		Psychosocial Emotional	Individual	Familial	Socioeconomic (A)	Situational	Societal	Supply and Demand of Jobs
Direction of Effect	Sum of Eigenvalues	4.81	3.58	1.64	1.38	1.22	1.14	1.04
	% Variance Explained	17.2	12.8	5.9	4.9	4.3	4.1	3.7

TABLE 7

Means and Standard Deviations of the Six Factors of the Career Factor Checklist (CFC) for Men and Women

			Familial		Societal		Individual		Socioeconomic		Situational		Psychosocial-Emotional	
			Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
FRESHMEN	Degree	M	13.68	15.15	13.15	13.79	26.34	27.62	14.38	15.18	7.65	7.88	15.53	16.48
		SD	3.48	3.19	2.69	3.08	4.07	3.23	3.64	3.99	2.47	2.92	4.14	4.96
	Direction	M	8.05	9.65	7.54	8.57	16.13	16.89	6.61	7.42	3.20	4.09	5.07	5.88
		SD	3.43	2.67	2.81	2.55	3.17	2.15	3.65	3.75	2.68	2.61	4.29	4.43
SOPHOMORE	Degree	M	14.38	15.23	13.49	13.66	26.72	27.20	14.36	15.59	8.01	7.86	16.23	17.25
		SD	2.97	3.10	3.19	2.92	3.61	2.64	3.95	3.58	2.71	2.85	4.99	4.77
	Direction	M	9.60	9.36	8.37	7.94	16.45	16.38	7.06	7.47	4.14	4.02	6.53	6.01
		SD	2.69	2.57	2.28	2.75	2.49	2.69	3.80	3.40	2.87	2.75	4.90	4.16
JUNIOR	Degree	M	14.91	15.11	14.20	13.23	26.58	27.34	14.89	14.60	8.31	7.77	16.02	16.39
		SD	2.40	3.41	2.46	3.28	3.39	3.86	3.13	4.27	2.04	2.83	4.55	4.77
	Direction	M	9.42	9.11	8.76	8.19	16.22	16.60	7.09	7.33	4.29	3.63	5.64	5.70
		SD	2.56	3.23	2.48	3.08	2.36	2.99	2.99	3.93	2.49	2.67	3.96	4.11
SENIOR	Degree	M	14.28	15.08	13.14	13.97	26.02	27.47	14.16	15.31	8.30	7.94	15.72	18.11
		SD	2.73	2.97	2.42	2.68	2.98	2.89	3.08	3.24	2.57	2.59	3.09	5.07
	Direction	M	9.58	8.89	8.20	7.97	16.34	17.08	6.84	6.81	3.84	3.50	5.48	5.61
		SD	2.94	3.23	2.47	3.06	2.17	2.06	4.01	3.32	2.98	2.62	4.30	3.67

30.97

Table 8

Grand Means

	Familial		Societal		Individual		Socioeconomic		Situational		Psychosocial-Emotional	
	Degree	Direction	Degree	Direction	Degree	Direction	Degree	Direction	Degree	Direction	Degree	Direction
Males	14.16	8.15	13.140	8.06	26.43	16.27	14.41	6.85	7.96	3.73	15.83	5.65
Females	15.16	9.45	13.69	8.32	27.47	16.74	15.20	7.37	7.86	3.97	16.77	5.87
Grand Means Across Sex	14.78	9.26	13.58	8.22	27.07	16.56	14.90	7.17	7.90	3.88	16.41	5.78